

REMARKS

The present application was filed on March 16, 2004 with claims 1-31. Claims 1-31 remain pending, and claims 1, 16, and 31 are the pending independent claims. Independent claims 1, 16, and 31 have been amended.

In the Advisory Action dated October 23, 2007, incorporating by reference the final Office Action dated August 10, 2007, the Examiner: (i) rejected claims 1-6, 9, 11, 12, 16-21, 24, 26, 27, and 31 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0161763 (hereinafter “Ye”) in view of U.S. Patent Application Publication No. 2002/0107858 (hereinafter “Lundahl”), further in view of U.S. Patent Application Publication No. 2003/0158855 (hereinafter “Farnham”); (ii) rejected claims 7, 10, 22, and 25 under 35 U.S.C. §103(a) as being unpatentable over Ye in view of Lundahl, Farnham, and further in view of U.S. Patent No. 6,625,585 (hereinafter “MacCuish”); and (iii) rejected claims 8, 13-15, 23, and 28-30 under 35 U.S.C. §103(a) as being unpatentable over Ye in view of Lundahl, Farnham, and further in view of U.S. Patent Application Publication No. 2004/0098617 (hereinafter “Sekar”).

Applicants have submitted herewith a Request for Continued Examination under 37 CFR §1.114 along with the fee under 37 CFR §1.17(e). Thus, Applicants respectfully request that prosecution be reopened and that the present amendments be entered. Applicants moreover request reconsideration of the present application in view of the amendments above and the remarks below. Applicants have amended the claims without prejudice solely to clarify the subject matter which the Applicants claim as their invention. More specifically, independent claims 1, 16, and 31 have been amended to recite “determining from the statistical data whether each of the one or more clusters is abnormal, wherein a cluster is abnormal when no objects in the data stream are added to the cluster prior to the time-sensitive weights of the cluster decreasing to a predefined value.” Support for this amendment may be found in the Specification at, for example, page 12, line 22, to page 13, line 10; and page 11, line 10, to page 12, line 12.

With regard to the §103 rejections of the recited claims over Ye, Lundahl, and Farnham, Applicants respectfully disagree with the Examiner’s contentions. The Examiner concedes that Ye and Lundahl fail to explicitly disclose the limitation wherein the statistical data comprises a time-

sensitive weight for each of the plurality of objects in each of the one or more clusters, the time-sensitive weight having a value that decreases at a specified rate such that more recently received objects are assigned a higher priority, and wherein the one or more clusters are condensed for maintenance at a high level of granularity as one or more cluster droplets. Final Office Action pg. 4, last paragraph. However, the Examiner argues that Farnham remedies the deficient teaching of Ye and Lundahl with regard to time-sensitive weights and condensing the one or more clusters for maintenance at a high level of granularity as one or more cluster droplets. Applicants reassert their arguments in the previous response, wherein Applicants contend that Farnham fails to teach the claim limitations. In addition, Applicants submit that Farnham teaches a computer system that models human memory by deriving associations between objects, events, and the context of the computer user or users, not a method for monitoring abnormalities in a data stream as recited in the claims; therefore, it is unlikely that one having ordinary skill in the art would combine Farnham with the other cited references. However, Applicants respectfully amend the claims to further distinguish the recited claims from the cited references.

Independent claim 1 now recites a method for monitoring abnormalities in a data stream. A plurality of objects in the data stream are received. One or more clusters are created from the plurality of objects. At least a portion of each of the one or more clusters comprise statistical data representative of the respective cluster. The statistical data comprises a time-sensitive weight for each of the plurality of objects in each of the one or more clusters. The time-sensitive weight has a value that decreases at a specified rate such that more recently received objects are assigned a higher priority. The one or more clusters are condensed for maintenance at a high level of granularity as one or more cluster droplets. It is determined from the statistical data whether each of the one or more clusters is abnormal. A cluster is abnormal when no objects in the data stream are added to the cluster prior to the time-sensitive weights of the cluster decreasing to a predefined value. At least one of the one or more clusters is reported as an abnormal cluster of objects in the data stream. Independent claims 16 and 31 recite additional aspects of the present invention having similar limitations.

Applicants respectfully submit that none of the references of record teach or suggest the independent claims, as amended. Farnham discloses an association control panel where a user can select the weight, event count, importance scaling, recency, duration, time scaling, time decay, and display threshold of an association. Farnham, [0075]. Further, Farnham discloses how the strength of association and object values decay with time. Farnham, [0075]. However, Applicants submit that neither Farnham nor the other cited references teach determining from the statistical data whether each of the one or more clusters is abnormal, wherein a cluster is abnormal when no objects in the data stream are added to the cluster prior to the time-sensitive weights of the cluster decreasing to a predefined value. None of the cited references determine abnormal clusters using time-sensitive weights as recited in the claims.

The claims recite a time-sensitive weight having a value that decreases at a specified rate. Further, if no objects in the data stream are added to a cluster before its time-sensitive weights fall to a predefined value, the cluster may be considered abnormal. Farnham does not disclose time-sensitive weights which are used to determine abnormal clusters. Farnham only discloses associations with objects in human memory, wherein the associations decrease as time passes. Farnham does not determine if an object is abnormal when an association decreases to a predefined value. The Specification at page 12, line 22, to page 13, line 2, discloses one illustrative embodiment of determining if a cluster is abnormal:

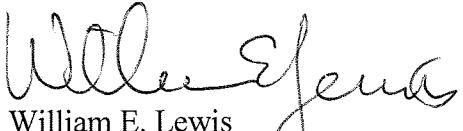
For example, when a new cluster is created during the streaming technique by a newly arriving data point, it is allowed to remain as a trend-setting outlier for at least one half-life. During that period, if at least one more data point is added to the newly formed cluster, it becomes an active and mature cluster. If no new points arrive during a half-life, then the trend-setting outlier is recognized as a true abnormality in the data stream, and the single point cluster is removed from the current set of clusters. Thus, a new cluster containing one data point is removed when the (weighted) number of points in the cluster is 0.5.

The cited references do not teach the subject matter recited in the claims and described in the Specification. For at least these reasons, independent claims 1, 16, and 31 are patentable over the cited references. It follows that dependent claims 2-15 and 17-30 are patentable at least by virtue of their dependency from claims 1 and 16.

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In view of the above, Applicants believe that claims 1-31 are in condition for allowance, and respectfully request withdrawal of the §103(a) rejections.

Respectfully submitted,



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